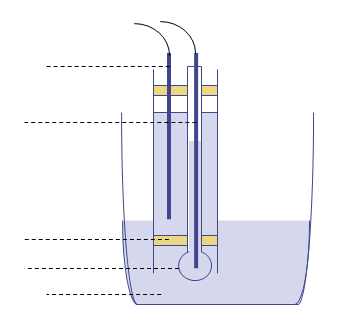
# T08D03 – (8.4) pH Scale ****Notes****

Name ……………………………………………………..

1. 8.4.1 Distinguish between aqueous solutions that are acidic, neutral or alkaline using the pH scale. (2)
2. 8.4.2 Identify which of two or more aqueous solutions is more acidic or alkaline using pH values. (2)
3. 8.4.3 State that each change of one pH unit represents a 10-fold change in the hydrogen ion concentration [H+(aq)]. (1)
4. 8.4.4 Deduce changes in [H+(aq)] when the pH of a solution changes by more than one pH unit. (3)
   1. Briefly describe what the logarithm scale is and why Sorenson decided to use such a scale for the concentrations of H+ and OH- in solution:
   2. Complete the following table for values of each

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **pH** | **pOH** | **pKw (pH+pOH)** | **[H+]** | | **[OH-]** | | **Kw**  **Sci. Not.** |
| **Sci.Not** | **Traditional Number** | **Sci.Not** | **Traditional Number** |
| **ACIDIC** | 1 |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |
| **N** | 7 |  |  |  |  |  |  |  |
| **BASIC** | 8 |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |  |
| 13 |  |  |  |  |  |  |  |
| 14 |  |  |  |  |  |  |  |

* 1. In order to convert between the above values, we must know a few basic examples, show the following:
     1. How to convert between pH and [H+], AND back again between [H+] and pH:
     2. How to convert between pOH and [OH-], AND back again between [OH-] and pOH
     3. How to convert between pH and pOH
     4. How to convert between [H+] and [OH-]
  2. Explain (using values and equations from above) why water is neutral:
  3. How does a pH probe and meter work? Diagram the following



Complete the following table:

[H+] [OH-] pH pOH

............ ............ 1.9 ............

............ 1.5 x 10-4 ............ ............

............ ............ ............ -0.60

2.3 x 10-2 ............ ............ ............

............ ............ 5.5 ............

0.000155 ............ ............ ............